

NIMS CERTIFIED MACHINE BUILDER CORE COMPETENCY REQUIREMENTS

| NIMS CERTIFIED MACHINE BUILDER CORE COMPETENCIES | | NIMS CREDENTIALS |
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| 1. | Identify and Demonstrate Use of Machine Safety and Personal Protective Equipment | Measurement, Materials, and Safety Level I |
| 2. | Demonstrate Compliance with Lock-out/Tag-out Procedures and OSHA Requirements and Guidelines | |
| 3. | Machine Operations and Material Handling, Hazardous Materials Handling and Storage, including EPA, Hazmat, and OSHA | |
| 4. | Part Inspection | |
| 5. | Process Control | |
| 6. | Process Adjustment – Single Part Production | |
| 7. | Participation in Processes Improvement | |
| 8. | Manual Operations: Layout | Job Planning, Benchwork, and Layout Level I |
| 9. | Manual Operations: Benchwork | |
| 10. | Sawing | |
| 11. | Job Process Planning | |
| 12. | Drilling Operations | Drill Press Skills Level I |
| 13. | Turning Operations: Turning Between Centers | Turning Between Centers Level I |
| 14. | Turning Operations: Turning Between Centers | Turning Between Centers Level II |
| 15. | Turning Operations: Chucking | Chucking Level I |
| 16. | Turning Operations: Chucking | Chucking Level II |
| 17. | Milling: Square Up a Block | Milling Level I |
| 18. | Manual Milling: Vertical and Horizontal | |
| 19. | Manual Milling: Vertical and Horizontal | Milling Level II |
| 20. | Surface Grinding, Grinding Wheel Safety | Grinding Level I |
| 21. | Surface Grinding, Horizontal Spindle, Reciprocating Table | |
| 22. | Surface Grinding, Horizontal Spindle, Reciprocating Table | Grinding Level II |
| 23. | CNC Programming - Milling and / or CNC Programming - Turning | CNC Milling and / or CNC Turning Level I |
| 24. | CNC: Write a Simple CNC Milling and / or CNC Turning Program and Review Tool Path | |
| 25. | CNC: Operate a CNC Milling Machine and / or Operate a CNC Lathe | |
| 26. | General Housekeeping & Maintenance | Included in all Machining Credentials |
| 27. | Preventative Maintenance - Machine Tools | |
| 28. | Tooling Maintenance | |

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|-----|---|---|
| 29. | Job Process Planning (Machine Building Level II and Level III) | NIMS Credentialing Achievement Records Level II and Level III |
| 30. | Job Planning - Layout (Machine Building Level II and Level III) | NIMS Credentialing Achievement Records Level II and Level III |
| 31. | Parts Identification and Preparation | NIMS Credentialing Achievement Records Level II and Level III |
| 32. | Preparation for Assembly – Level Base of Machine | NIMS Credentialing Achievement Records Level II |
| 33. | Measure and Verify Bearing Surfaces | NIMS Credentialing Achievement Records Level II |
| 34. | Surface Preparation | NIMS Credentialing Achievement Records Level II and Level III |
| 35. | Bolt Hole Preparation | NIMS Credentialing Achievement Records Level II and Level III |
| 36. | Install Bearings and Shafts to Housing | NIMS Credentialing Achievement Records Level II and Level III |
| 37. | Select and Install Gears; Match, Align, Secure and Pin Mating Parts | NIMS Credentialing Achievement Records Level II and Level III |
| 38. | Install Components for Fluids and Air | NIMS Credentialing Achievement Records Level II and Level III |
| 39. | Install Mechanical Components on Machine | NIMS Credentialing Achievement Records Level II and Level III |
| 40. | Install Drive Systems | NIMS Credentialing Achievement Records Level II and Level III |
| 41. | Performance Test Sub-Assembly | NIMS Credentialing Achievement Records Level II and Level III |
| 42. | Mount, Align, and Secure Sub-Assemblies | NIMS Credentialing Achievement Records Level II and Level III |
| 43. | Set Machine Adjustments | NIMS Credentialing Achievement Records Level II and Level III |
| 44. | Install Machine Guarding | NIMS Credentialing Achievement Records Level II and Level III |
| 45. | Verify Machine Operation | NIMS Credentialing Achievement Records Level II and Level III |
| 46. | Tear Down Machine for Shipment (if applicable) | NIMS Credentialing Achievement Records Level II and Level III |

***NOTE:** There is not a specific sequence to the implementation of the Core Competencies. The forty six Core Competencies and the fourteen NIMS Credentials, listed above, must be satisfactorily completed to meet the requirements of a NIMS Certified Machine Builder Apprentice Apprenticeship Program and earn a *Certificate of Completion of Apprenticeship*.